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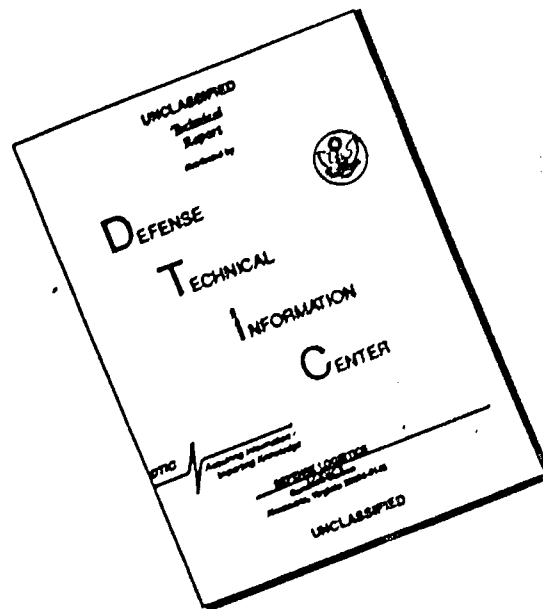
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IN REPLY REFER TO

AGAM-P (M)(22 Apr 68)

FOR OT RD 681269

30 April 1968

SUBJECT: Operational Report - Lessons Learned, Headquarters, 588th
Engineer Battalion (Cbt)(Army), Period Ending 31 January 1968 (U)

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Kenneth G. Wickham

KENNETH G. WICKHAM
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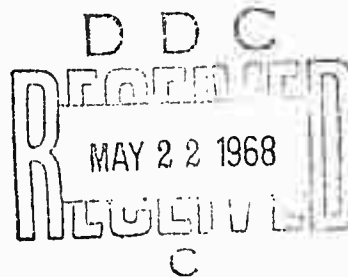
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HEADQUARTERS, 588TH ENGINEER BATTALION (C)(A)
APO SF 96216

LBB-3

15 February 1968

SUBJECT: Operational Report-Lessons Learned (RCS-CSFOR-65) for Quarterly
Period Ending 31 January 1968

THRU: Commanding Officer
79th Engineer Group (Const)
APO SF 96491

Commanding General
20th Engineer Brigade
APO SF 96491

Commanding General
USA Engineer Command Vietnam (Prov)
ATTN: AVCC-P&O
APO SF 96491

Commanding General
United States Army, Vietnam
ATTN: AVHGC-DH
APO SF 96307

Commander in Chief
United States Army, Pacific
ATTN: GFOP-OT
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15 February 1968

SUBJECT: Operational Report-Lessons Learned (OAS-ASPO-60) for Quarterly
Period ending 31 January 1968

SECTION 1: Significant Organization or Unit Activities

1. GENERAL

a. The 588th Engineer Battalion (Combat) (Army) is organized under TOE 5-35E with a Headquarters and Headquarters Company and four combat engineer line companies. In addition the 362d Engineer Company (L.) is attached to this headquarters for all purposes.

b. The battalion (minus) is located at Tay Ninh Base Camp, RVN (XT143518). Company C is located at Dau Tieng, RVN (XT495475).

c. The battalion is organic to the 79th Engineer Group which has headquarters at Long Binh.

d. The battalion is under the operational control of II Field Force and is assigned operational support missions by that headquarters.

e. During the period 8 December 1967 to 24 February 1968 the battalion was placed in direct support of the 25th Infantry Division for participation in Operation Yellowstone.

f. The 104th Engineer Company (Dump Truck) was placed in direct support of the battalion during the period 23 November 1967 to 14 February 1968. This assignment was made so as to increase the battalion haul capability on Operation Yellowstone.

g. One platoon of the 530th Engineer Company (Panel Bridge) was placed in direct support of the battalion from 6 to 11 December 1967 for the purpose of installing an 80 foot DS Bailey Bridge vic Katum (XT330895) in support of Operation Yellowstone.

2. COMMAND

a. The 588th Engineer Battalion was commanded by LTC Frederick G. Rockwell Jr. throughout this quarter. SGM Edward J. Kirby served as sergeant major.

b. Other personnel assignments:

<u>POSN</u>	<u>NAME</u>	<u>PERIOD</u>
Bn XO	MAJ Bill D. Cotton	1 Nov - 31 Jan
CO, HHC	1LT Hal B. Matthiesen	1 Nov - 31 Jan
	1LT Andrew C. Lattu	- 31 Jan

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<u>USN</u>	<u>Name</u>	<u>Period</u>
CO, Co A	CPT Andrew B. Seidel	1 Nov - 31 Jan
CO, Co B	CPT John T. Hardy, Jr.	1 Nov - 31 Jan
CO, Co C	CPT John C. Whistler CPT Charles Porter	1 Nov - 30 Jan 30 Jan - 31 Jan
CO, Co D	CPT Larry M. Pigue	1 Nov - 31 Jan
CO, 362d Ingr Co	CPT David G. Weise	1 Nov - 31 Jan

3. PERSONNEL ADMINISTRATION, MORALE AND DISCIPLINE

a. The battalion had an average overall strength of 95% during the quarter. Losses for the next three months follow: February - 105; March - 113; April - 111. It is anticipated that these vacancies will be filled as they occur and that the overall strength level will remain above 90% throughout the next quarter.

b. The authorized officer strength is 44 commissioned and 4 warrant officers. The average assigned officer strength was 44 commissioned and 4 warrant officers.

c. During this quarter the battalion has been based in four locations, three of which were field locations. Routine administration was difficult for a short while until regular transportation patterns and communications could be established. Communications with the 79th Engineer Group has been difficult. Telephone service has become intermittent and large administrative traffic on the radio interferes with operational traffic. A courier from Headquarters Company flies to and from Long Binh daily to insure that proper distribution is given to all correspondence.

d. There were no general, 2 special, and no summary courts martial convened during the quarter. Charges included absence without leave, disrespect towards an officer, disobeying an officer, insubordinate conduct towards non-commissioned officer, fraud, and possession and use of marijuana. There were 57 infractions of various kinds for which punishment under Article 15, UCMJ was administered.

e. The morale of the men assigned to the battalion has been high. That over 70 men have extended their tours to serve with the battalion during the quarter is an indication of this.

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4. INTELLIGENCE AND COMMUNICATIONS:

a. Intelligence information was received from the following sources: daily briefings by the 1st Brigade, 25th Infantry Division, with headquarters at Tay Ninh; 25th Infantry Intsums and Perintreps; and spot reports and intelligence summaries from II Field Force, USMACV (F) and USARV. In addition the Battalion receives, regularly, intelligence bulletins, weather summaries and terrain studies. This intelligence information is thoroughly studied by the Intelligence Officer and is disseminated as required to the companies in daily briefings.

b. Intelligence information originating within the Battalion is forwarded to 79th Engineer Group and to the 65th Engineer Battalion who are the divisional engineers for the 25th Infantry Division.

5. PLANS, OPERATIONS AND TRAINING

a. Base Construction Support:

(1) At the beginning of the quarter, a moratorium was in effect on all new construction at Tay Ninh and Dau Tieng. Consequently 10% of the battalions effort was committed to base construction. As of the beginning of December the Battalion was placed in direct support of the 25th Infantry Division for Operation Yellowstone; resulting in a reduction of the figure to 5% for the remainder of the quarter.

(a) Tay Ninh, Main Camp:

1. Cantonment for 4,802 men (CD 66-171DC-79, 79th Engineer Group). This project provides for a base camp for operation and is used by 1st Brigade, 25th Infantry Division and supporting organizations.

2. MUST Hospital (CD66-212DC-79): This project provides for 20,640 square feet of service buildings and quarters for personnel and 6,700 square yards of hardstands upon which the rubberized, inflatable hospital buildings are placed.

2. Nui Ba Den Signal Facility (CD 12-224-01-T-75): This project provides for a cantonment for 122 men of the 125th Signal Bn and radio relay facilities on the top of Nui Ba Den mountain.

4. Water Well Fill Points (CD75-203-01-T-73): This project is to provide five potable water fill points for the Tay Ninh base camp.

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5. IWCS Site (CD 75-207-04-T-PL): This project provides site preparation and construction of access roads, parking areas and all foundations and slabs required for construction of electronics equipment and power buildings for an integrated wide-band communications system.

6. 1st Logistical Command Facilities: Continuous maintenance and improvements was required on open storage areas for all classes of supply and the drainage in the ammunition supply point.

7. Rock Quarry and crushing operation, Nui Ba Den (Op 66-16-79): This facility was in operation during the entire quarter.

(b) Dau Tieng, Vietnam area: Field cantonment for 4,500 men (CD 12-203-01-T-6S): This project provides a base camp for the 3rd Brigade, 25th Infantry Division. As at Tay Ninh, much of the work is accomplished on a self-help basis.

(c) Soui Da, Vietnam area:

1. Field cantonment for 182 men (CD51-206-01-T-73): This project provided a fire support base for the 2d Battalion, 32 Artillery Group. Prior to the end of the quarter this cantonment was abandoned by U.S. forces due to a movement to more strategic areas.

2. Water Well Fill Joints (CD51-205-01-T-14): This project provided the Soui Da fire support base with potable water until the cantonment was abandoned.

(2) Progress: That made during the quarter 1 November 1967 to 31 January 1968 is indicated:

(a) Tay Ninh Area:

1. 4,002 Man Cantonment:

(a) During the beginning of the quarter the battalion completed the 2880 square feet of troop billets that had been started before the construction moratorium.

(b) 22,916 CY of laterite was hauled to provide hardstands and proper drainage for temporary buildings (wabtoc) and parking hardstands for incoming units. This also required the placement of 114 linear feet of culvert.

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2. Water Well Fill Point: Prior to Operation Yellowstone the first of five fill points was constructed except for the piping.

3. MUST Hospital: No work was done on this project during this quarter since the hospital is on an operational status and the remaining requirements are of a low priority.

4. Mui Ba Den Signal Facility: Construction continued on this project throughout the quarter. The following facilities were completed: 960 square foot messhall, 400 square foot generator pad, 480 square foot orderly room/supply, 232 square foot club, 4800 square feet of billets and the final 25% of a 20,000 gal water reservoir. This required air-lifting by CH-47 helicopter all construction materials and engineering equipment from Tay Ninh to the top of the mountain for a total of 73 parties or 170 tons. This project was 75% complete as of 31 January 1968.

5. RCS Site: During the first month of this quarter, the foundation and slabs were laid for the power building, the antenna base and the fuel tank pad. Three fuel tanks were then set in place prior to Operation Yellowstone, leaving the project at 95% complete as of 31 January 1968.

6. 1st Logistical Command Facilities: During the past quarter 5000 meters of access roads have been graded and maintained, which required hauling 610 CY of laterite and 45 CY of 3" rock.

7. The 362d Engineer Company (LH) operated the rock quarry and crushing site throughout the quarter. The total production for the quarter was 35,245 CY of 3"(-) rock and 2,710 CY of 1½"(-) rock.

(b) Dau Tieng area:

1. 4500 Man Cantonment: As in Tay Ninh, during the first month of this quarter all construction that had been started, before the moratorium, was completed. The following facilities were completed prior to the beginning of Operation Yellowstone: 3600 square feet of maintenance shed, 960 square feet of administrative building, two 12' water towers and 1920 square feet of troop billets. After completing these facilities emphasis was directed toward LOC work and improvement of roads in the cantonment.

2. Water Well Fill Points: Prior to the beginning of Operation Yellowstone, all the concrete for the first Fill point was placed leaving the entire project at 10% complete.

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(c) Souid Da Area (Abandoned):

1. 182 Man Cantonment: During the first month of the quarter one 960 square foot hutment was constructed.

2. Water Well Fill Point: Prior to Operation Yellowstone a complete water well fill point was constructed. This construction included a 12' water tower, placement of a commercial water purification unit, construction of storage building and necessary piping.

b. Lines of Communications Support:

(1) Summary: At the beginning of the quarter 45% of the battalions effort was committed to lines of communications support projects. Once Operation Yellowstone began the figure decreased to 35%. During this quarter the following missions were assigned:

(a) Maintain and upgrade to support combat operations the following routes in the zone of the 25th Infantry Division: National Route QL-22; Interprovincial Routes LTL-13, and LTL 26; Provincial Route TL-4 and Military Routes 239, 243 and 246.

(b) Repair and maintain Route QL-22 between Go Da Ha and Tay Ninh as required to keep the MSR open.

(c) Maintain Routes LTL-26 and 239 and remove bailey bridge on Route 239 over Saigon River, after center pier had been sabotaged.

(d) Issue materials to ARVN engineers for construction of three bridges on Route QL-22.

(e) Open QL-22 from Tay Ninh to Thien Ngon at the beginning of Operation Yellowstone to insert an element from this battalion in the Thien Ngon area for operations.

(f) Open and maintain TL-4 from Tay Ninh to Katum during Operation Yellowstone as required to keep the MSR open for daily convcys.

(2) Execution: Work accomplished during the quarter is indicated.

(a) Maintenance and upgrading in support of operations:

1. During the Operation Yellowstone, Company C cleared Route TL-4 of mines and repaired bad sections of the road from Tay

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Ninh to Katum on the initial movement. Working in front of the convoy, they made the road passable for more than 300 vehicles. During the operation Company C swept for mines and maintained the road from Katum south to Prek Klok and Company B was responsible for the road between Prek Klok and Tay Ninh. During the quarter these two companies were responsible for removing 113 mines, and hauling 30,505 CY of laterite and 1,415 CY of 3"(-) rock in their effort to keep the road open. The 500th Engr Co IB constructed an 80' Bailey Bridge at XT333897 and Co C constructed a 40' log bridge at XT267314. This operation has not been terminated to date and the road is used daily for convoys with traffic in excess of 300 vehicles per day.

2. In preparation for Operation Yellowstone several blown culverts were filled in with a total of 145 CY of 3"(-) rock by Company A on QL-22 between Tay Ninh and Trai Bi.

3. Prior to a brigade movement from Katum to a location east on route 246 it was necessary to construct a log ford in a stream where the original bridge had been demolished. Company C accomplished the task and constructed a log bridge by-pass later for future use.

4. Issue of materials to ARVN engineers for construction of three bridges on Route QL-22: All coordination was made with the USMACV advisor for the 301st ARVN Engineer Battalion. Construction was underway at the beginning of the quarter with approximately 30% of the project complete. By 8 January 1968 the project was completed.

(b) Maintenance and repair of LOC's:

1. Route 243 between Route TL-4 and LTL-13: During this quarter a total of 1382 CY of laterite and 50 CY of 3"(-) rock have been hauled to repair blown culverts and upgrade the road. Two 40' culverts were replaced and 10 KM of road regraded.

2. Route 13 to Loc Ninh from Soui Da: 1095 CY of laterite and 500 CY of 3"(-) rock were hauled to fill craters and upgrade road and 2.9 KM of road were regraded. Rome plows cleared 170,500 square meters of land on the sides of the road. This is a clearing of approximately 50 meters on either side of the road.

3. Route QL-22 from Tay Ninh to Go Da Ha: 245 CY of laterite and 435 CY of 3"(-) rock were hauled to repair pot holes and to repair several soft spots in the vicinity of Go Da Ha.

4. Route LTL-26 from Tay Ninh to Route 239: 225 CY of laterite and 60 CY of 3"(-) rock were required to fill craters and the replacement of four 40' culverts that had been blown.

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5. Route 239 from Route LTL-26 to Dau Tieng: During the previous quarter Route 239 was under water in several large areas. 6530 CY of laterite and 75 CY of 3"(-) rock were used to raise and upgrade the road in the low areas and also to replace several culverts which had been blown. A 20' timber trestle bridge was constructed to replace a dry span which had been used during the wet season and after the 200' double single bailey bridge across the Saigon river had been sabotaged, it was removed in preparation for utilizing the bridging on Operation Yellowstone.

c. Operation Support:

(1) Summary: As of 7 December 1967 this battalion and all its attachments went in direct support of the 25th Infantry Division for the duration of Operation Yellowstone. Company A, elements of HHC, 588th Engineer Battalion and 362d Engineer Co (LE) moved to Thien Ngon to construct a Special Forces Camp and a C-123 airstrip at that location. Battalion headquarters, Co C, Co D and the remaining elements of HHC, 588th Engineer Battalion and the 362d Engineer Co (LE) moved to Katum with 1st Brigade, 25th Infantry Division also to build a special forces camp and restore the existing C-130 strip. As of 31 January 1968 the Katum airstrip was completed and the Special Forces camp was 49% complete. As of the same date the Thien Ngon airstrip had not been started and the Special Forces camp was 35% complete. Company B laagered at French Fort during most of the quarter and as of the end of the quarter was still maintaining Rt TL-4 from Tay Ninh to Irek Klok. (2) Execution:

(a) Preparation for Operation: In preparation for the operation, the 588th Engineer Battalion (C)(A) was supplemented with the 104th Engineer Company DT to increase its haul capacity and one platoon of the 500th Engineer Company PB to give it the capability to tactically bridge a gap on the way to Katum. Also sufficient airliftable engineer equipment was acquired to allow early insertion of Company D at Katum to begin restoration of the C-130 strip.

(b) Beginning of Operation: On the morning of 7 December 1967 simultaneously Company C conveyed from Dau Tieng and Headquarters Company, portions of Co D and 362d Engineer Company (LE), one platoon of the 500th Engineer Company PB and one platoon of the 104th Engineer Company DT conveyed from Tay Ninh to Bao Cao, on Route TL-4. At this location they joined security elements from the 25th Infantry Division and laagered overnight.

1. At 1330 hrs. on 7 December 1967, Company A conveyed from Tay Ninh, north on Route QL-22, to Trai Bi and laagered for the night.

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2. On the morning of 8 December 1967 elements of Company D and the airtransportable equipment were inserted into Katum by CH-47 sorties and CH-54 sorties.

3. All units on TL-4 continued north to Irek Klok and units on QL-22 conveyed to Thien Ngon.

4. On 9 December 1967 the convoy on TL-4 proceeded north to Katum and closed in at 1700 hrs the same day.

5. On 12 December 1967 the first fixed wing aircraft landed on the Katum airstrip. This marked the completion of a very important phase of Operation Yellowstone.

6. During the early days of the operation all supplies and equipment were supplied by fixed wing aircraft and CH-47 sorties. Once the road was again opened convoys proceeded to supply the operation at a rate of one per day.

7. Throughout the entire operation Thien Ngon has been supplied entirely of CH-47 sorties and QL-22 has been a closed road.

8. Construction of both Special Forces camp consisted of the erection of a classic star shaped compound capable of housing both Special Forces personnel and CIDG personnel. As of 31 January 1968 5 ea. CIDG billets (15'x60'), 2 ea bath houses (10'x20'), 4 ea supply buildings (20'x24') and 2 ea S.F. billets (20'x36') had been completed for 49%. As of the same date the ammo bunker, all CIDG billets, all latrines, all CIDG messhalls and all S.F. billets were completed for 85%.

9. All road work in conjunction with the operation has been included in paragraph 5 under "Maintenance and upgrading in support of operations".

d. Training:

(1) Equipment operators: 79th Engineer Group procures allocations for personnel to attend various operators courses given by units of the USA CV (P). Men from this unit attended for D-7L dozer, grader, quarry equipment and wheeled tractor and scraper during the quarter.

(2) Combat leaders Course: 25th Infantry Division gives this unit allocations for the combat leaders course as they are available.

(3) Weapons: Each company conducts monthly classes in operation and care of all TO&E weapons. Safety is emphasized. Attendance by all personnel is mandatory.

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6. LOGISTICS

a. All classes of supply including construction materials are requisitioned through the 228th Supply and Service Company at Tay Ninh. Bills of Materials for MCA projects are approved by 79th Engineer Group before issue.

b. While on Operation Yellowstone the 228th Supply and Service Company opened Class I, III and V yards at Katum.

c. The battalion surgeon and aidmen maintained an aid station at Tay Ninh during the quarter. During Operation Yellowstone the surgeon and medics moved to the field to provide medical support. Separated companies or elements have had medics attached while on the operation or away from headquarters. Medical cases which cannot be handled by battalion medical personnel are referred to the MUST Hospital at Tay Ninh or the 3rd Brigade, 25th Infantry Division dispensary at Dau Tieng.

7. Force Development: None

8. Command Management

a. Projects and missions assigned to 588th Engineer Battalion are overseen by the S-3 Officer. Both the S-2 and the S-3 sections operate together to plan and manage projects and missions. Equipment resources or organic and attached companies are allocated on a daily basis to insure efficient utilization.

(1) Base development planning: Policy was established by a base development planning board answering to the commander of the major unit housed. This headquarters implemented the policy within the framework of MCA project directives. Management of projects in progress constructed on a self help basis such as troop billets is further implemented by strict control of materials issue. Within guidelines of project directives and base plans, units are issued materials for these projects. To insure that the various requirements are met, no materials are issued until an accepted area plan is completed. An engineer NCO supervises construction.

(2) Projects and missions are managed through daily operations meetings. Management indicators used as committing effort and controlling progress include daily troop disposition reports, weekly and monthly construction progress reports, and equipment deadline reports.

b. Indigenous personnel: Hire of Vietnamese is through a battalion civilian personnel officer. The executive officer of Headquarters Company handles this as an extra duty.

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SECTION II - Commanders Observations and Recommendations

1. Personnel:

a. Item: This battalion was notified, that it would be required to operate under the "Modified Military Pay Voucher System". This would have required the movement of all finance personnel and records from Tay Ninh to 10th Finance Office in Cu Chi.

Discussion: This would have resulted in the loss of many man hours in transporting personnel, with financial problems to and from Cu Chi. Also the convoy from Tay Ninh to Cu Chi requires that all individuals carry basic field equipment (i.e. weapon, steel pot, etc.) This would mean that R&D and PCS personnel who required financial advice or assistance would be forced to return to Tay Ninh before proceeding out of country to secure or turn in field equipment.

Solution: A letter was forwarded through channels, stating the problems that would develop if this move were accomplished. This battalion's financial support was assured by the 10th Finance Section, Cu Chi; however, based on the information furnished and the recommendations of higher headquarters to have this battalion serviced by a finance officer located in Tay Ninh, it was decided that the finance records and personnel would remain in the battalion.

b. Item: SGLI for new arrivals to Vietnam

Discussion: The battalion finance section, having inspected the records of new personnel arriving in the unit, discovered that many were not carrying SGLI. On further investigation it was found that many had forgotten that it was available and wished to begin a policy.

Recommendation: Recommend that a letter be given to all new arrivals in a unit, explaining the importance of the insurance and informing them that they still have the opportunity to buy the insurance.

c. Item: Notification of next of kin:

Discussion: In several instances individuals upon being lightly wounded and returned to duty or hospitalized were contacted and asked if Notice of Next of Kin was still desired. In many cases they said no, whereas their signed statements requested that notification be made.

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Observation: Many of the individuals involved did not have a concept of what was considered lightly wounded. A more detailed explanation is now given to incoming personnel as to what is considered a light wound. This has resulted in a higher percentage of negative replies to notification of next of kin.

2. Operations:

a. Item: Rome Plow Operation

Discussion: When clearing dense jungle with a Rome plow, the cab begins to sway after several hits by falling debris. Constant swaying then weakens the members at the point of connection to the dozer and they eventually break.

Observation: When the cab has bracing installed diagonally from the vertical posts to the top cross member, the swaying is eliminated and the cab remains secured to the tractor. This simple measure greatly reduces the chance of injury to the operator.

b. Item: Equipment for cantonment construction.

Discussion: While involved in cantonment construction there are many jobs that could be handled easily with a smaller piece of equipment than the clam shell, D-7 dozer, or frontloader. Providing smaller equipment to the battalion would release the heavier items of equipment for more suitable missions requiring their capabilities.

Recommendations: A small bucket loader (1½ CY) with a back hoe attachment would be adequate for loading, backfilling and also digging small items such as grease pits, sumps and drainage ditches. This would leave larger pieces of equipment such as cranes and standard frontloaders to be utilized on heavier work.

c. Item: D7L Dozer Operations in Laterite Pit

Discussion: The ripper teeth on the D7L bull blade are not holding up when used to loosen the hard pan laterite found in Tay Ninh Province. The trunion pins are breaking and also the ripper teeth, caps and cap pins are failing.

Recommendation: There is a need for stronger trunion pins and ripper parts for the D7E dozer. The new hydraulic ripper attachment does expedite operations and also serves to conserve bull blades. Recommend that additional ripper attachments be issued to engineer battalions in RVN.

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d. Item: Dust control & mine detection.

Discussion: It has been noticed that dust on major convoy routes is not only a major convoy control problem but also enables the VC to easily plant and camouflage mines.

Observation: By shooting the road, at the end of the work day, with Diesel/RU-3 mixture, convoys on the following day are given the benefit of some dust control. Also the mine sweep team is aided in its visual mine detection. Even if the asphalt spreader is used to only put lines of asphalt mix on the road, any disturbance of the pattern is easily recognized and very difficult to camouflage during the night.

e. Item: Mine Sweeping

Discussion: This battalion has had extensive experience in sweeping roads for mines.

Observations: The following observations have been responsible for efficient operation:

(1) Mine sweep teams that stay intact with the same area of responsibility soon "learn" their road and sweep time decreases.

(2) Security, in the form of Infantry (or Engineer) foot troops 50-100 meters ahead of the sweep team and 50 meters off the road, provides early warning against ambushes or command detonated explosives.

(3) 90% of all mines found were near the edge of the road.

(4) Mines were found often by visual means by noticing irregularities in the color or texture of the ground. Occasionally the area immediately over the mine is swept with a brush, therefore breaking the continuity of wheel tracks.

3. Training:

Item: Mine familiarization.

Discussion: During the past quarter several types of mines and detonating devices have been frequently found.

Recommendation: That sweep teams be given familiarization classes on commonly found explosive devices. Inclosures #1 thru #8 are diagrams and circumstances of devices found by this battalion.

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LBB-3

15 February 1968

SUBJECT: Operational Report-Lessons Learned (RCS-CSFOR-65) for Quarterly
Period Ending 31 January 1968

4. Intelligence: None

5. Logistics: None

6. Maintenance:

a. Problem: D7E major breakdowns; cylinder head cracks, valve burnups & gasket failures.

Discussion: During recent months working in extreme dust and heat we experienced many major breakdowns with our D7E dozers. Almost all deadlined vehicles were due to operator handling. We found that clogged radiators and lack of lubrication; and improper handling of vehicle's caused the breakdowns.

Solution: Constant inspection and explanation of operating procedures were stressed. Few operators realize the importance of idling their engine for 3-5 minutes after operation. After operating at 50,000 RPM, it takes a while to bring the engine "back to earth". Lubrication was stressed once a week for everything, and a constant cleaning of engine area and radiator of leaves, brush etc, and cleaning of air filter was a must.

b. Item: 5 Ton 465-1 Engine & Failures.

Discussion: During our dry, dusty season operation, we had 100% more engine failures with the multifuel engines than in the previous 6 months. Most of the problem again lies with the drivers. But the multifuel engine is a sensitive machine and expert care must be given to it.

Solution: One of the best answers has been supervised motor stables. Also during operation a minimum of two air filters per truck should be kept for daily exchange. Continuous check of air filter is a must. Just blowing the filter clean is not enough, it should be washed in detergent and water and shaken dry.

Engine warm-up time (3-5 minutes) and idle time (3-5 minutes) before shut down prevents turbocharger failure; a common cause of deadlined equipment.

Finally, teaching and instructing drivers to drive by their tachometer is a solution to keeping your engines in top shape. New operating RPM limits from full load to empty load are 2600 - 2900 RPM.

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15 February 1968

SUBJECT: Operational Report-Lessons Learned (AJS-CSFOR-65) for Quarterly
Period Ending 31 January 1968

7. Safety:


Item: Firing Mechanism Generator for Claymore Mines

Discussion: After an accident that could well have been fatal, it was found that about half of the hand generators used to detonate Claymore mines had a very dangerous characteristic.

Observation: When placing Claymore mines on the perimeter it is customary to check the hand generator before connecting the wires. If the plunger is pushed through 2 clicks, on releasing the hand grip the lever will return to its open position causing a double firing action. However, if the lever is depressed through only one click, it does not return when the hand grip is released. While in this position, if the generator is dropped or jarred in some manner, it can cause the lever to return, thus creating current and firing the mine if connected. Even with the safety on, enough current can be introduced to the cap to fire the mine.

8 Incl

1. Wood Plate AT Mine Activator
2. Comb. of AT & Claymore Mines
3. Booby-Trapped 155mm Round
4. Mine from Mortar & Arty Shells
5. Box Type Wood AT Mine
6. Typical Home-Made AT Mine
7. Booby-Trapped RPG-2 Round
8. Booby-Trapped Box Mine


FREDERICK G. ROCKWELL JR.

LTC, CE
Commanding

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EGE-CO

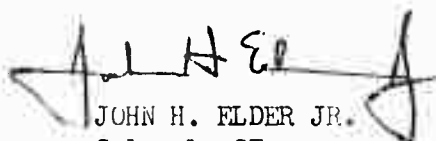
1st Ind

SUBJECT: Operational Report - Lessons Learned (RCS CSFOR - 65) for
Quarterly Period Ending 31 January 1968

DA, HEADQUARTERS, 79TH ENGINEER GROUP, APO 96491, 22 February 1968

TO: Commanding General, 20th Engineer Brigade, APO 96491

The Operational Report - Lessons Learned submitted by the 588th
Engineer Battalion has been reviewed and is considered adequate.


JOHN H. ELDER JR.
Colonel, CE
Commanding

Copy Furnished:
CO, 588th Engr Bn

AVBI-OS (15 Feb 68) 2nd Ind
SUBJECT: Operational Report - Lessons Learned (RCS CSFOR-65) for
Quarterly Period Ending 31 January 1968

DA, Headquarters, 20th Engineer Brigade, APO 96491 2 March 1968

TO: Commanding General, USAECV(P), ATTN: AVCC-P&O, APO 96491

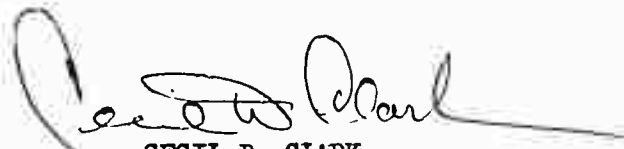
1. Forwarded for your information and action IAW USAECV(P) Reg 1-19,
dated 15 April 1967.

2. This headquarters concurs with the ORLL submitted by the 588th
Engineer Battalion subject to the following comments:

a. Section II, para 2h: Concur, however, at this time the 1½ cy
bucket loader is an item in short supply, required for forward areas
where only airmobile equipment can be utilized.

b. Section II, para 6a: Operators must also be advised to check
radiator water level frequently. Loss of water from the radiator has been
found to be the major cause of the maintenance problems mentioned.

FOR THE COMMANDER:



CECIL D. CLARK
Major, CE
Adjutant

21

AVCC-P&O (15 Feb 68) 3rd Ind
SUBJECT: Operational Report-Lessons Learned (RCS CSFOR-65) for Quarterly
Period Ending 31 January 1968

HEADQUARTERS, UNITED STATES ARMY ENGINEER CORPS
VIETNAM (PROV), APO 96491

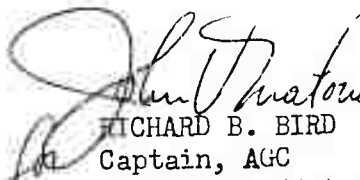
15 MAR 1968

TO: Commanding General, United States Army Vietnam, ATTN: AVHOC-DST,
APO 96375

The attached ORLL, submitted by the 586th Engineer Battalion (C), has been reviewed by this headquarters and is considered adequate except as follows:

Item concerning equipment, section II, para 2b, page 13. These items will be available in the Class IV Equipment Pools.

FOR THE COMMANDER:


RICHARD B. BIRD
Captain, AGC
Assistant Adjutant General

22

AVHGC-DST (15 Feb 68) 4th Ind
SUBJECT: Operational Report-Lessons Learned (RCS-CSFOR-65) for Quarterly
Period Ending 31 January 1968

HEADQUARTERS, US ARMY VIETNAM, APO San Francisco 96375

TO: Commander in Chief, United States Army, Pacific, ATTN: GFOI-DT, 20 MAR 1968
APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 January 1968 from Headquarters, 588th Engineer Battalion (C)(A) (WAOJAA) as indorsed.

2. Concur with report as indorsed. Report is considered adequate.

3. A copy of this indorsement will be furnished to the reporting unit through channels.

FOR THE COMMANDER:



CHARLES A. BYRD
Major, AGC
Assistant Adjutant General

Copy furnished:
HQ, USACEV (P)
HQ, 588th Engr Bn

GPOP-DT (15 Feb 68) 5th Ind

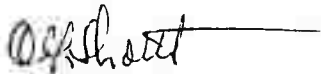
SUBJECT: Operational Report of HQ, 588th Engr Bn (Cbt)(Army) for
Period Ending 31 January 1968, RCS CSFOR-65 (R1)

HQ, US Army, Pacific, APO San Francisco 96558 30 MAR 1968

TO: Assistant Chief of Staff for Force Development, Department of the
Army, Washington, D. C. 20310

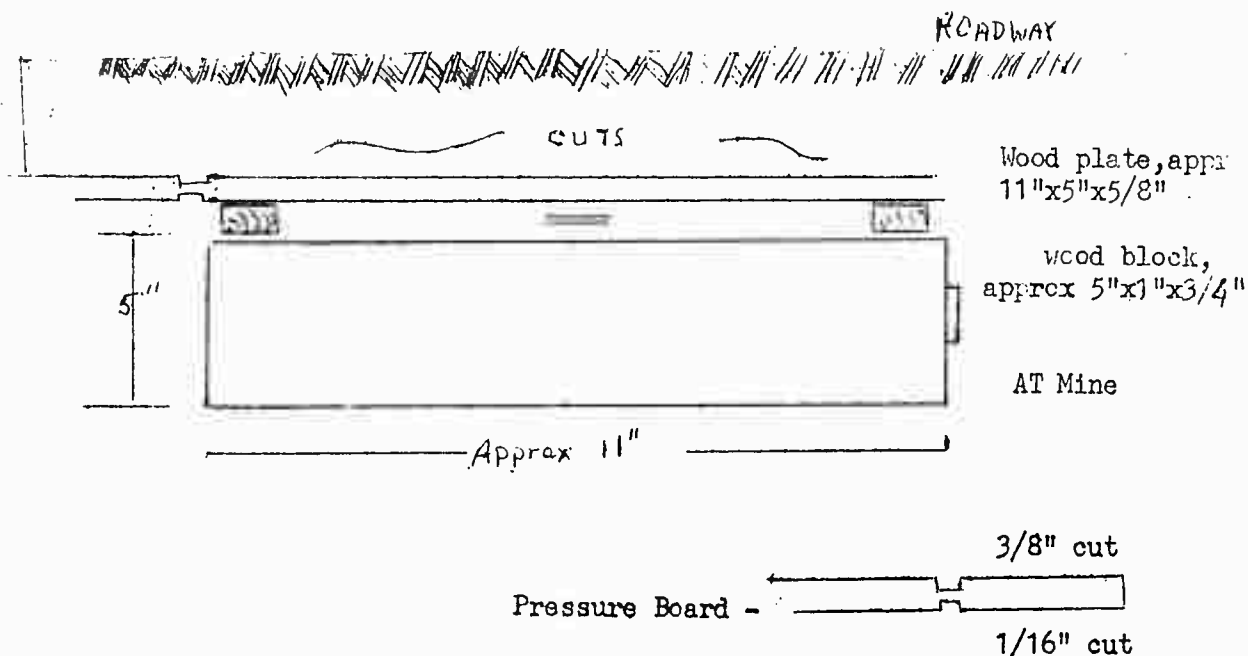
This headquarters has evaluated subject report and forwarding indorse-
ments and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:



C.I. SHORTT
CPT, AGC
Asst AG

WOOD PLATE AT MINE ACTIVATOR



The above activating device with home made round, molded AT mine with BLU 3/B bomblet was found on route TL-4 just north of Nui Ba Den mountain (XT2858) on 28 November 1967. Mine was found by visual observation (foot prints and disturbed soil).

Placed on the home made mine and separated by two 1"x5"x3/4" blocks was a 11"x5" hardwood board. This board was pre-cut on both ends and both sides for easier breaking as shown in sketch. By applying a pressure in excess of 200 lbs on the board, the board breaks thereby depressing the detonator in BLU 3/B bomblet and exploding mine.

Numerous types of activating boards (or plates) have been found in the same general vicinity during the period 18 November through 10 January 1968.

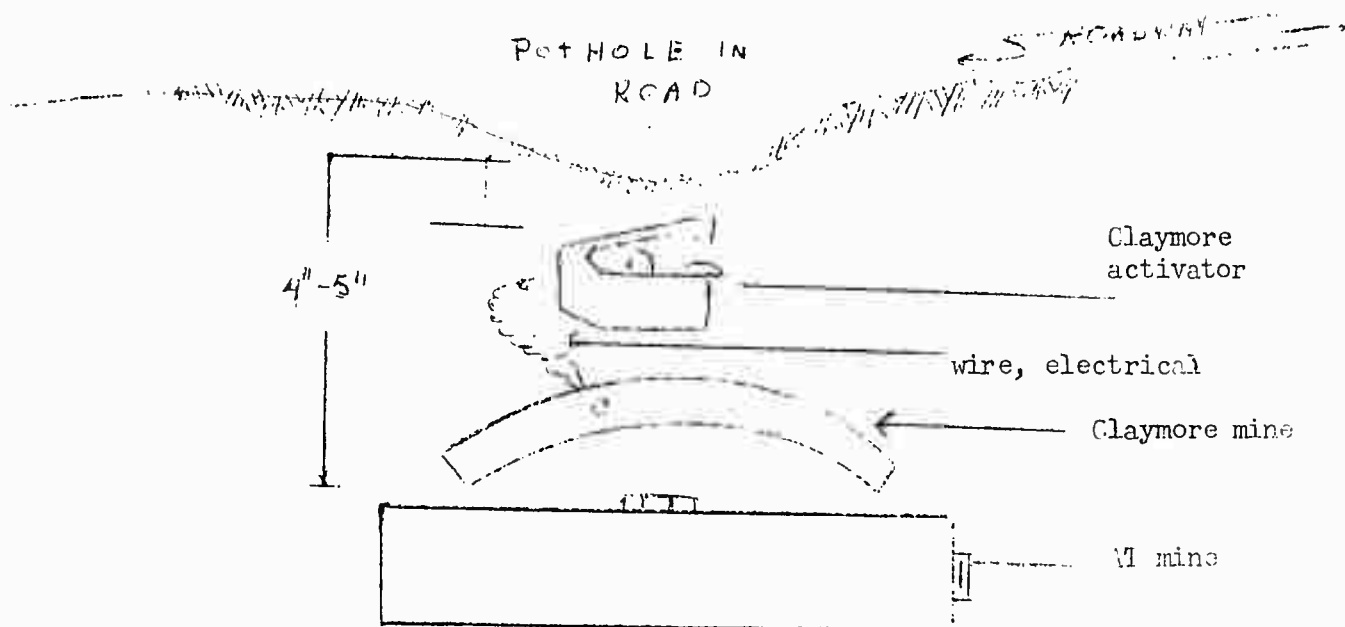
This activating device (pressure board) is generally used with home made mines.

Mine was wrapped in waterproofing plastic sheet.

Incl #1

24

COMBINATION OF AT AND CLAYMORE MINES

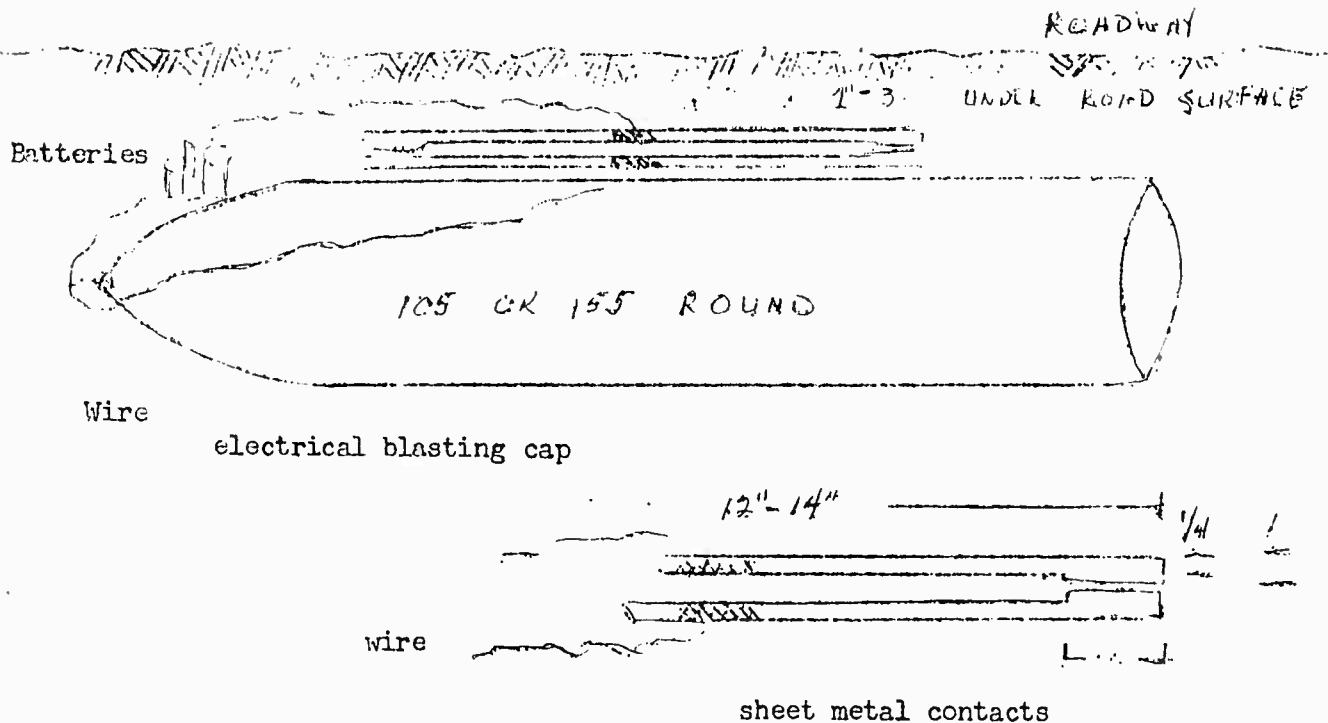


On 26 November 1967 a 5 ton dump truck detonated a VC mine at XT284617 on route #4 just north of Nui Ba Den mountain (XT2858). Based on close investigation of the crater, truck and the immediate vicinity of the crater it was concluded that the VC had used a combination of Claymore mine and an AT mine activated by a Claymore hand detonator. The foregoing is based on the following findings:

- a. Rubber safety and parts of Claymore hand detonator were found in the immediate vicinity of crater.
- b. Rim and underside of truck's bed was peppered with numerous buck-shot type of holes.
- c. The resulting crater in road was too large for claymore mine explosion.
- d. The road had been swept by mine detectors that morning and nothing was found at that location. Due to laterite fill, metal objects buried at depth of 6 inches or more can not be detected by mine detectors.
- e. Numerous 5 ton dump trucks had been using the same road that morning until one truck with a heavy load on its left side and traveling at high speed detonated this mine which was buried in a pot hole. The truck's left rear duals were blown off. Resulting crater size: $4\frac{1}{2}$ ft diameter and 4 ft deep.

Incl #2

BOOBY-TRAPPED 155mm ROUND



The above booby-trapped 155mm round was found approximately 10 meters off route #4 north of Nui Ba Den mountain on 29 November 1967.

An enlisted man detonated the blasting cap only by stepping on the activator. The 155mm round was later destroyed in place.

The booby trap consisted of a bamboo activator as shown in sketch. The activator was securely wrapped in plastic waterproofing material. By compressing the bamboo activator the two metal strips, located in the middle of the activator, close the electrical circuit thereby detonating the electrical blasting cap in the 155mm fuse well.

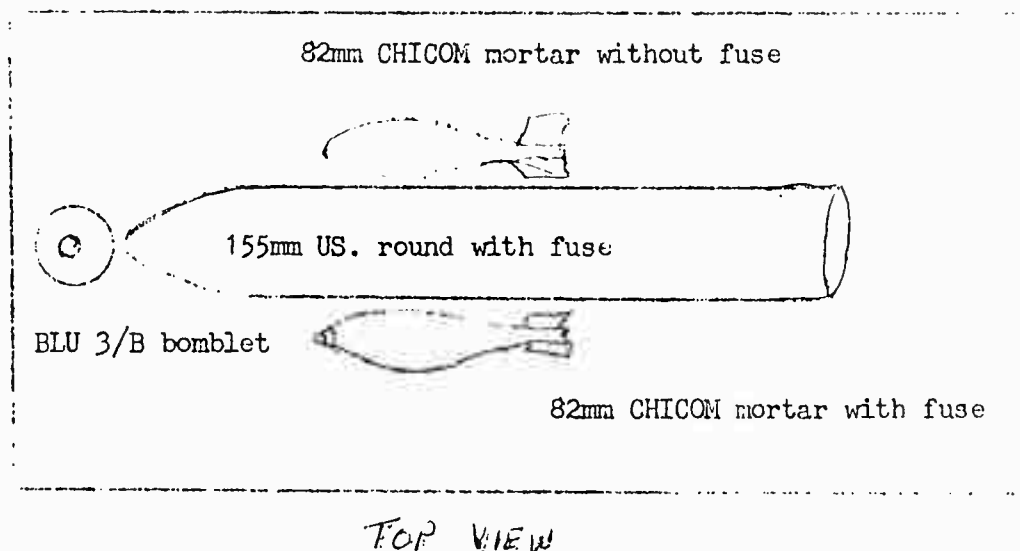
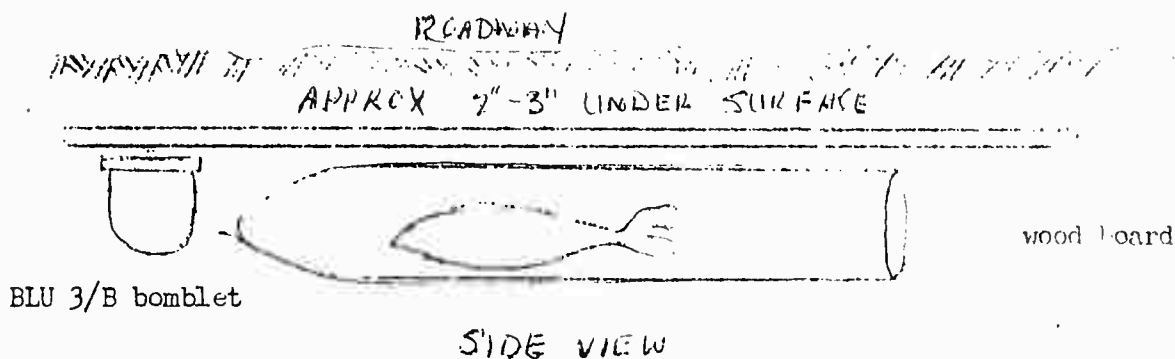
The power source consisted of three U.S. BA-30, 1.5 volt batteries which were carefully wrapped in waterproofing plastic.

Several other 105mm and 155mm rounds have been found in the same general vicinity using the same activating device during the period 18 November 1967 through 10 January 1968.

Incl #3

24

LINE FROM MORTAR AND ARTILLERY SHELLS

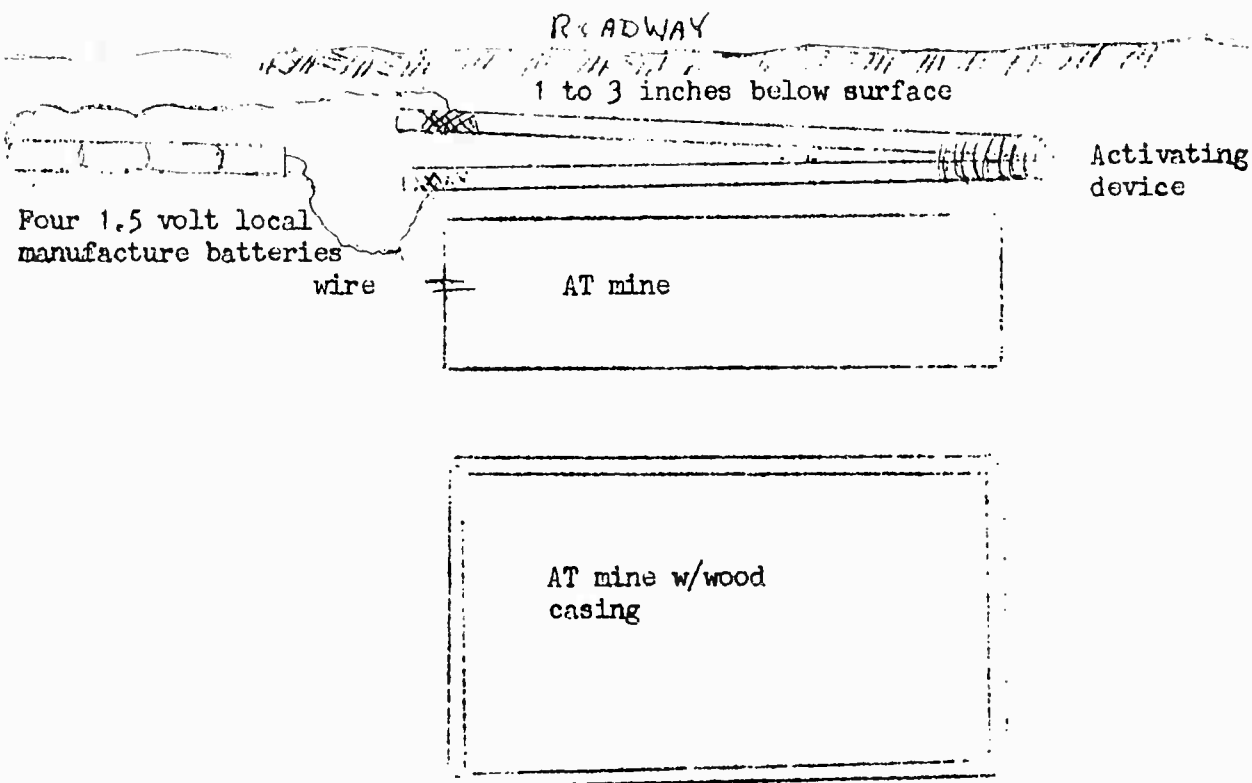


The above device was found on route 4 just north of Nui Ba Den mountain (XT2858) on 26 November 1967. The device was found, recovered and munitions destroyed at later date.

The device consisted of one U.S. manufactured BLU 3/B bomblet which was intended to act as activating device by pressure applied to the covering board; one U.S. manufactured 155mm round; one CHICOM manufactured 82mm mortar round without fuse, and one CHICOM manufactured 82mm mortar round with fuse.

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BOX TYPE WOOD AT MINE



Numerous wood case AT mines have been found on route #4 north of Nui Ba Den mountain (XT2858) during the period 18 November 1967 through 10 January 1968. Size of mine slightly varies, but generally is 10"x10"x4". Different type of activators have been found.

The mine shown in sketch was found on 16 December 1967 on route #4 at XT284617 by visual observation. On routes containing laterite fill this type of mine can not be detected by mine detectors. This mine consisted of activator, power source and explosive with electric blasting cap.

The activator was made of a split, 1½" diameter, 18 inch long wooden stick which was tied at one end with wire, separated in the middle by a chunk of laterite and, at the separated ends had sheet metal contacts. The entire activating device was wrapped in plastic waterproofing material,

The power source consisted of four "Eagle Brand" (Saigon manufacture) 1.5 volt batteries kept in place by wood sticks and rubber bands.

The explosive consisted of a wood box with moulded demolition and electric blasting cap.

TYPICAL HOME MADE AT MINE

Explosive



2 to 6 inches

BLU 3/B fragmentation bomblet w/o fin

Dates of discovery: November 1967 through January 1968

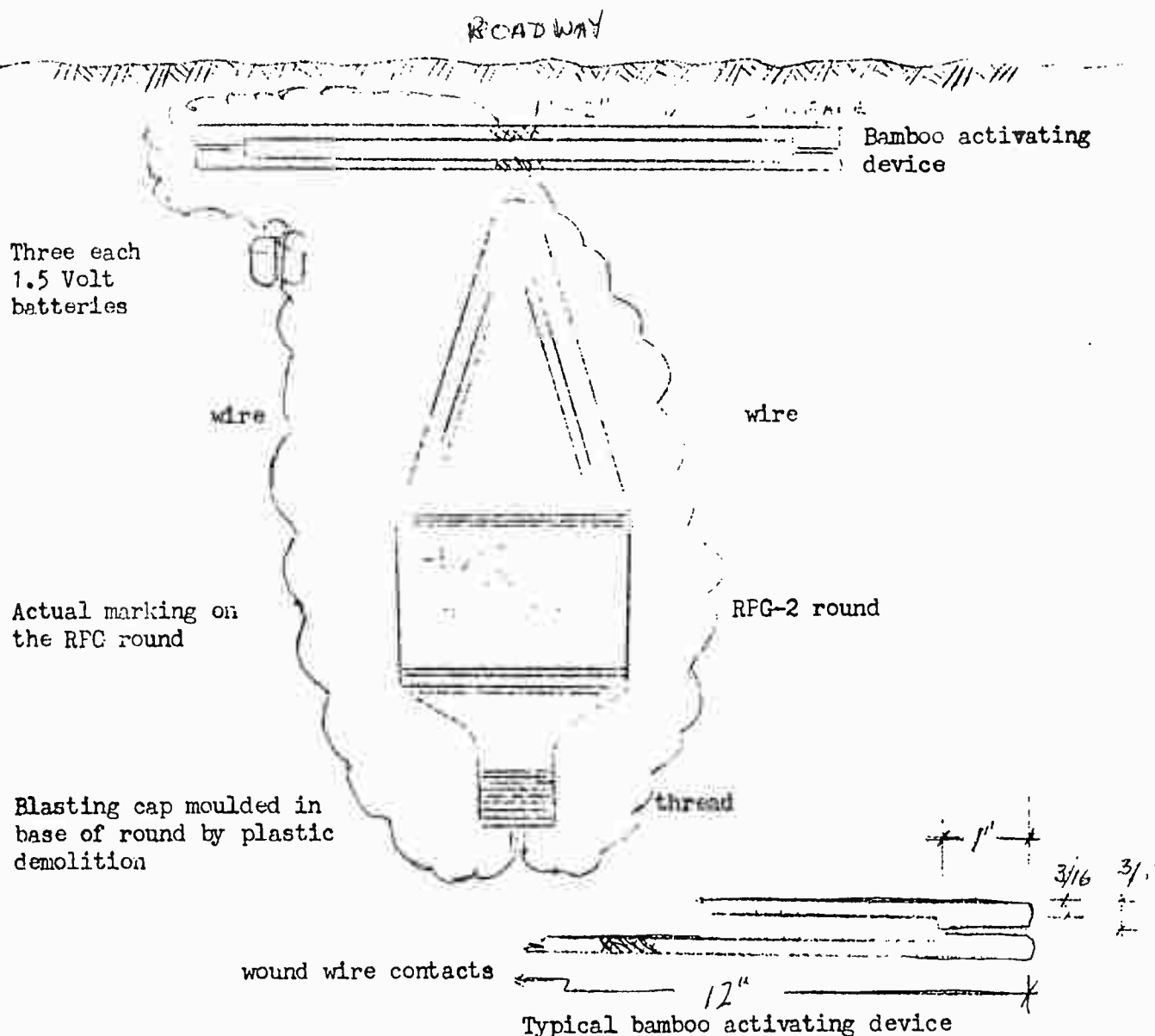
Location: On routes #4 and #243 north of Nui Ba Den Mountain (KT2858)

Description: Round, approximately 12" diameter and 4" high, moulded, home made mine with BLU 3/B bomblet as activator. Type of demolition used is unknown. Mine does not have an outer shell or casing and the moulded demolition resembles rough concrete mixture. Several mines have been detected visually (by surrounding footprints or disturbed soil). On routes containing laterite fill this mine can not be detected by mine sweepers if buried 6 inches below surface or deeper.

When these mines are blown in place the resulting craters are 6 to 8 ft diameter and 3 to 4½ ft deep.

Mine is generally wrapped in plastic water proofing material.

BOOBY-TRAPPED RPG-2 ROUND



The above booby trapped rocket round (Soviet anti-tank grenade, model RPG-2, CHICOM type 56, B-40) was found on route 4 at XT279614 just north of Nui Ba Den mountain on 8 January 1968.

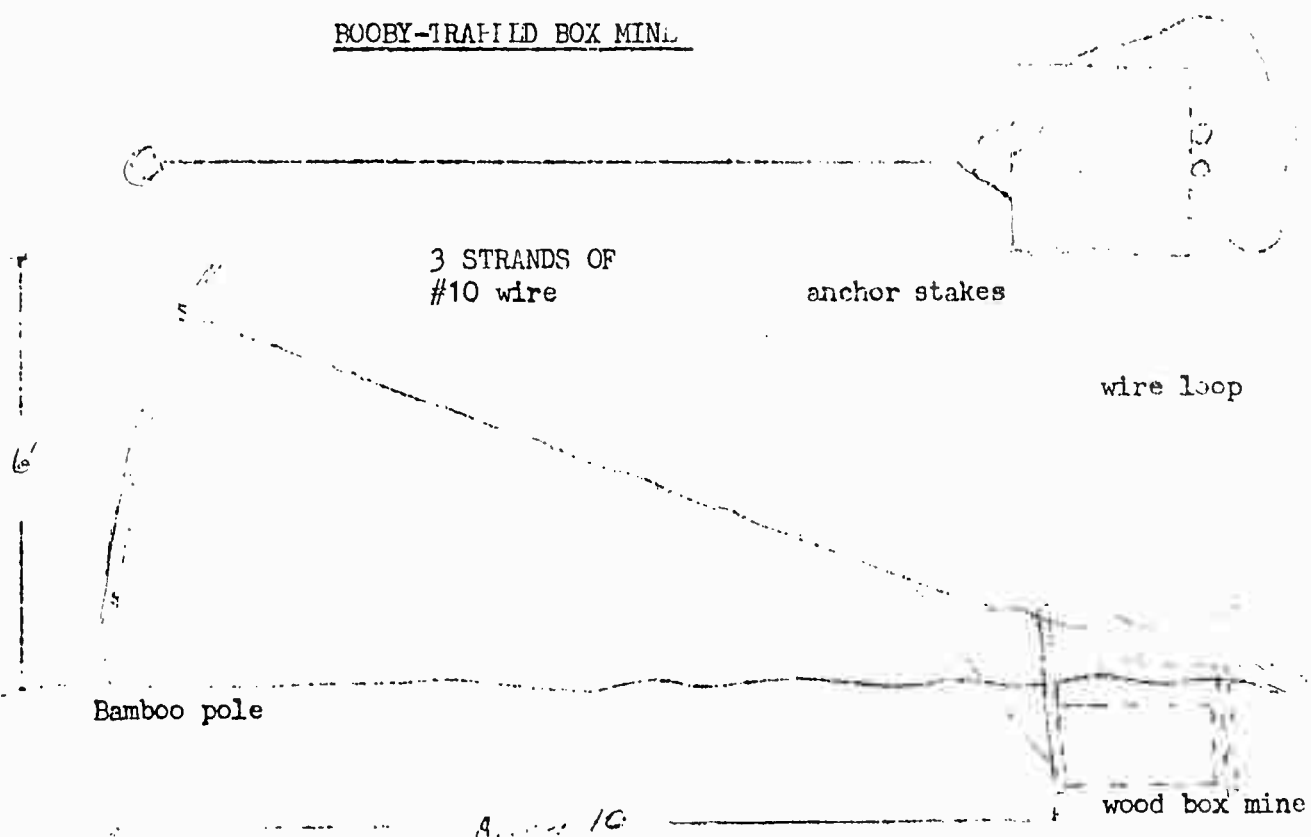
The booby trap consisted of typical bamboo activating device, power source of three 1.5 volt japanese manufacture batteries and the explosive, RPG-2 round.

There have been numerous this type of bamboo activating devices found during the period of 18 Nov 67 through 10 Jan 68 on route 4 in the vicinity of Nui Ba Den mountain (XT2858).

Each of the three components were carefully wrapped in plastic materials,

Incl #7

BOOBY-TRAPPED BOX MINE



The above booby trapped wood box mine was found off route #4 just north of Nui Ba Den mountain (XT2858) on 24 November 1967. Mine was found by a Rome plow doing jungle clearing along route 4. Mine was placed in dense jungle undergrowth and its actual purpose is unknown. It is assumed that the mine is intended for Rome plows. If the 6 ft bamboo pole is pushed over by the Rome plow's blade the mine would be activated under the tracks of body of the plow. Due to unknown type of booby-trapping the mine was blown in place. The wire loop is possibly intended to snag ground troops.

UNCLASSIFIED

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